Defense Information Systems Agency

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NR-KPP Interoperability Testing & Certification

Joint Interoperability Test Command

30 March 2009

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Agenda

- DoD / Joint Staff Directives and Instructions
- JITC Testing and Certification Process
- NR-KPP Elements
- Testing Overview
- Test Environment
- NR-KPP Testing Timeline
- Test & Certification Products

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Directives and Instructions

DODD 4630.5

"IT and NSS interoperability shall be verified early, and with sufficient frequency throughout a system's life ..."

CJCSI 6212.01E

"All IT and NSS must be evaluated and certified for Joint interoperability by DISA (JITC)."

DoD 4630/5000

Interoperability is "the ability to provide and accept data, information, material, and services ... ...includes both the technical exchange of information and the end-to-end operational effectiveness of that exchange, as required for mission accomplishment."

DODI 4630.8

"All IT and NSS ... must be tested for interoperability before fielding ... and certified by DISA (JITC)."

CJCSI 3170.01G

Establishes JCIDS w/ NR-KPP for CDD and CPD

DoD 5000 series

"For IT systems, including NSS, .. JITC shall provide system interoperability test certification memoranda ... throughout the system life-cycle and regardless of ACAT"

NR-KPP T&E Process

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Joint Staff J-6

Interoperability & Supportability Certification Documents:

CDD, CPD, ISP, ISP Annex, TISP, and TEMP

Note:
JCD, ICD, & TEMP are not J-6 certified

Test & Evaluation

Risk

Developmental and Operational Test & Evaluation

Analysis

DATA

Joint Interoperability Test Certification

Expires after 4 years, or until there are changes affecting interoperability (system or environment)

Note:
Interoperability changes require reentering this process at the appropriate point:

- ✓ **Document updates**
- ✓ **J-6 I&S Certification**
- ✓ **Test & Evaluation**

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IOP Category	6212.01D NR-KPP	6212.01E NR-KPP	Impact / Interoperability Evaluation
Net-Centricity	Compliance with the Net-Centric Operations and Warfare (NCOW) Reference Model (RM) enterprise services	Compliance with net-centric data and services strategies, DoD IEA	Strengthen NC Data/Service Strategy Compliance - Evaluate Data/Service visibility, accessibility, understandability - Evaluate compliance with business rules and principles of DoD IEA
Interfaces / Information Exchanges	Operationally effective information exchanges	Compliant solution architecture products including specified operationally effective information exchanges	Use of DoDAF, JCSFL, Enterprise Architecture, etc. - Verify E2E info exchange IAW the solution architecture
Standards Compliance	Compliance with: Global Information Grid (GIG) Key Interface Profiles (KIPs) GIG IT standards and profiles identified in the TV-1	Compliance with GIG Technical Guidance (GTG), including TV-1, GESPs (KIPs until GESPs available)	KIPs transition to GESPs and combined with DISR compliance into GTG element - Evaluate applicable GESPs/KIPs via SC/IOP testing - Evaluate standards compliance
IA Compliance	Compliance with DoD information assurance requirements	Compliance with DoD IA requirements	Verification that IA requirements met – no change - Verify C&A status - IOP testing is conducted using the approved IA configuration - JITC IA testing where applicable
Supportability	Compliance with Spectrum Supportability and E3, Joint Tactical Radio System (JTRS),	Compliance with Spectrum Certification and E3, SAASM, and JTRS requirements	Added Supportability to NR-KPP compliance -Verify current DD 1494 (spectrum cert) and E3 compliance - Verify GPS SAASM compliance or waiver

NR-KPP Elements

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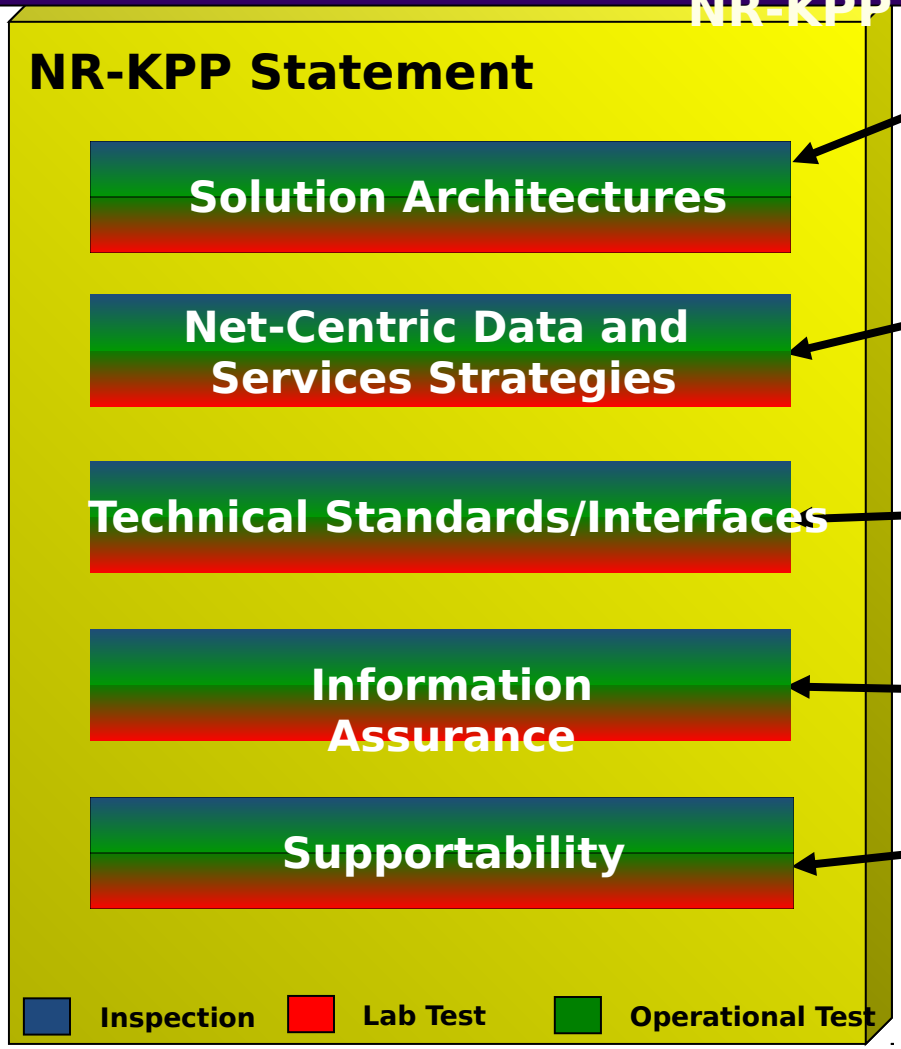
JITC certifies a system meets *interoperability requirements* contained in the J-6 *certified* NR-KPP (e.g., CPD, ISP/TISP, ISP Annex, NR-KPP Package)



Includes descriptions of the system's operation, traceable between the views – defines end-to-end operationally effective information exchange

Describes the activities, standards, and data strategy required to establish, use, operate, maintain, and manage an enterprise-level (EIE MA, COIs) net-centric information environment

Set of managed technical interface standards (DISR/GESPs), bringing visibility and stability to critical interfaces

DIACAP, including availability, integrity, authentication, confidentiality, and non-repudiation

Verify completion of spectrum availability, electromagnetic compatibility, JTRS usage, and GPS SAASM requirements

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Testing Overview
Solution Architectures

- **Integrated Architecture products define end-to-end information exchange and use for a given capability.**
  - **Focus is on joint critical exchanges (NR-KPP threshold) and includes all types: automated data and voice.**
  - **MOPs with attributes found in SV-6, e.g., timeliness, throughput, periodicity, size, etc. for assessment of both critical and non-critical exchanges.**
  - **MOEs for determining operational effectiveness and completeness of information exchanges. Use OV-5/6c and SV-5 data to determine if system performance meets operational requirements. Applies to assessment of both critical and non-critical exchanges.**
  - **Interoperability MOPs / MOEs incorporated into TEMP**
  - **Leverage output from PM, OTA, and other COCOM /**

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Testing Overview

Net-Centric Data and Services Strategies

- **Identify net-centric services and shared enterprise-level data**
  - **Verify services and data are properly registered, visible, and accessible**
  - **Conformance testing for data / schemata (e.g., proper XML format)**
  - **During interoperability testing, verify correct provision and use of services / data and any related performance parameters (QoS, timeliness, etc.)**
- **Net-centric services / data analyzed by:**
  - **COI (may be multiple COIs, overlapping COIs)**
    - **Design test scenarios to verify effective information exchanges within and among declared COIs**
  - **EIE MA (Enterprise Info Environment Mission Area – i.e., core services – NCES)**
    - **Design test scenarios to verify the implementation and use of core services as they become available**
- **Core net-centric standards**
  - **IPv6 is a net-centric enabling technology that must be considered**
  - **XML, WSDL, SOAP, UDDI, etc… used to implement SOA via web services**

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Testing Overview
Technical Standards/Interfaces

- **GESP Declaration (or KIP declaration, e.g., for pre-6212.01E documents) contained in certified CPD, ISP, ISP Annex, TISP, or NR-KPP package, TV-1 from DISROnline.**
  - **List of applicable GESPs/KIPs, GESP/KIP profiles, and implementation options, and TV-1 standards**
- **JITC reviews applicable standards called out by GESP/KIP/TV-1.**
  - **Identify standards/profiles that require testing vs. other evaluation methods.**
  - **Collect data to support standards conformance certification.**
  - **Analyze and roll up the results.**
- **Information exchanges across key interfaces verified IAW performance parameters during interoperability testing.**
- **Available GESP/KIP/standards information:**
  - **DISRonline to select DISR GESP/KIP profiles, TV-1 standards**

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Testing Overview
Information Assurance

- During / after DT, JITC will:
  - Verify the DIACAP process has been accomplished.
  - Review the System Identification Profile (SIP), Certification Report, Plan of Action and Milestones (POA&M) and the IATO, as applicable.
- During / after OT, JITC will:
  - Review the Comprehensive DIACAP Package.
  - Work closely with PMs and OT testers to evaluate IA aspects of the systems.
  - Review OT report and verify IA compliance, as appropriate.
- Test configuration must mirror approved operational configuration (i.e., testing in a realistic IA environment).
- Results of any IA accreditation, waivers, etc. collected for reporting in certification.

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Testing Overview

Supportability

- **Spectrum Supportability:**
  - **Spectrum Certification:**
    - **JITC reports on the stage of the DD 1494.**
    - **JITC reports on the J/F 12, if the process is complete.**
  - **E3 - JITC reports on E3 control which may include HERO, HERF, HERP, MIL-STD-461 and MIL-STD-464A testing.**
- **JTRS - If the system uses radio-based communications, and the radio is in the 2 MHz to 2 GHz spectrum, and the radio is not JTRS, then JITC will report on the ASD-NII authorization to use a non-JTRS solution.**
- **GPS SAASM - JITC will verify that each JCIDS document, or ISP, TISP, or EISP contains a statement that the program is in compliance with CJCSI 6130.01E, and that analysis of capability technical documentation and test data confirm compliance.**

NR-KPP Testing Timeline

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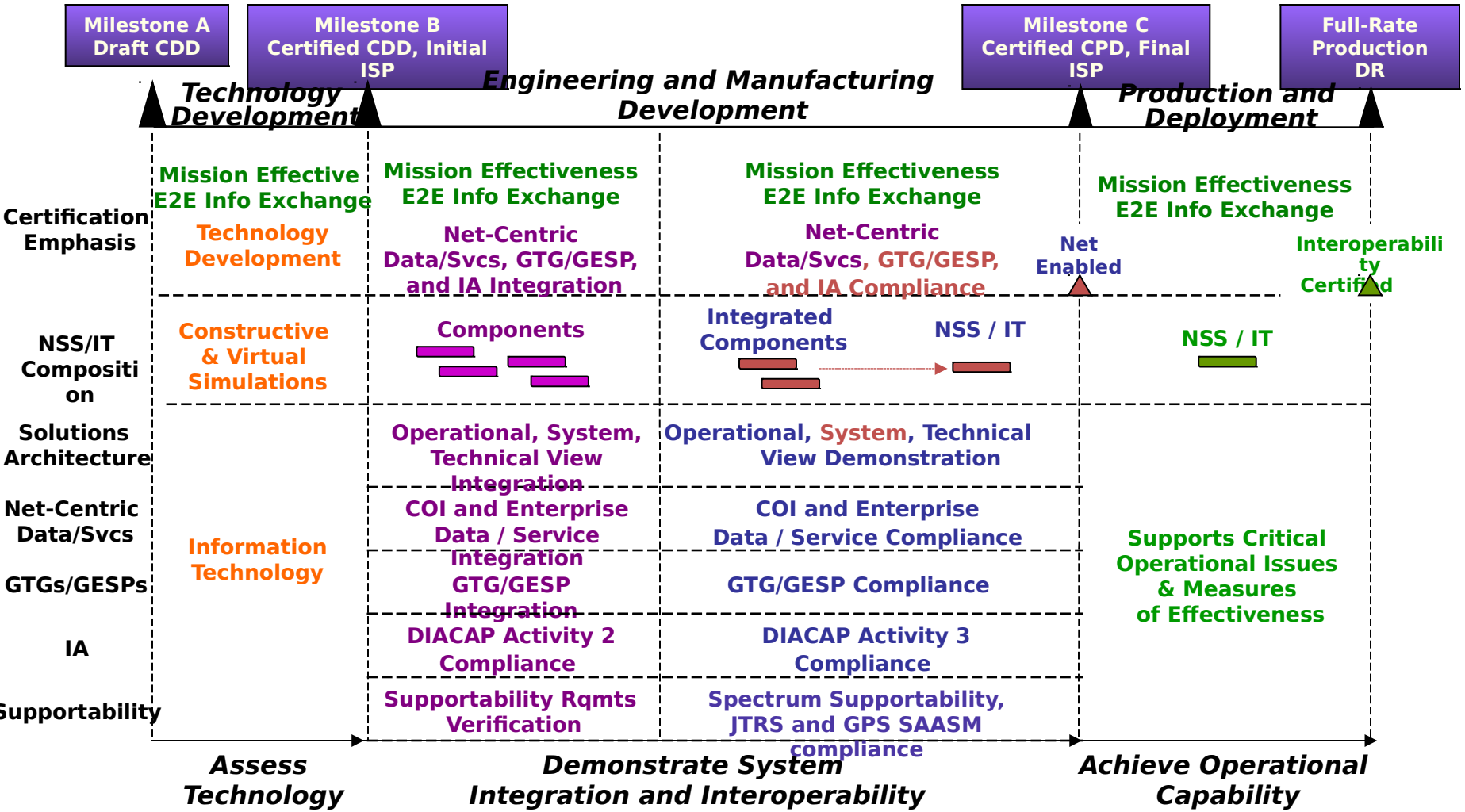

NR-KPP evaluation approach developed before MS B

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Interoperability Test and Certification

Certification	Description	System can be fielded (Y/N)?
Standards Conformance Certification	System is certified for conformance to a standard/standards profile	No
Joint Interoperability Test Certification	Full system certification. System meets at least ***all critical*** interoperability requirements	Yes
Limited Joint Interoperability Test Certification	System meets ***subset*** of critical interoperability requirements	Yes, with ICTO
Interim Joint Interoperability Test Certification	A capability module has adequately demonstrated interoperability for at least ***all critical*** threshold requirements identified for the increment	Yes
Special Interoperability Test Certification	Based on other J-6 approved requirements (i.e., no NR-KPP) -- E.g., use of UCR for voice switches	Yes
Non-Certification	Critical operational impacts expected Provides a warning to the warfighter	No
Interoperability Assessment	PM would like to determine the interoperability status System may lack J-6 certified	No

Contact Information

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- **Hotline**
  - 24/7 C4I Technical Support
  - 1-800-538-JITC (5482)
  - hotline@disa.mil
  - http://jitc.fhu.disa.mil/support.html
- **Joint Interoperability Tool (JIT)**
  - http://jit.fhu.disa.mil
  - Lessons Learned reports
  - NATO Interface Guide
- **System Tracking Program (STP)**
  - https://stp.fhu.disa.mil
  - Test events
  - Test plans and reports
  - Certification results

General Testing Support
(301) 744-2681 or http://jitc.fhu.disa.mil/gtsform.html

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Questions?

DEFENSE INFORMATION SYSTEMS AGENCY

DAU NR-KPP Training

3-hour Program Manager-focused NR-KPP Computer Based Learning module (Net-Ready Key Performance Parameter Course - CLM 029) available online at http://www.dau.mil.

Do not need to be a registered DAU student to take module

Lesson Objectives

- **Explain the joint interoperability test and certification process**
- **Explain program managers' responsibilities in joint interoperability testing**
- **Describe the operational and test and evaluation implications of the NR-KPP**
- **Understand the 4-year interoperability re-certification requirement and process**